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August 23, 2020

1 Chap 4 Trigonometric Functions

1.1 4.2 Graphs of trig functions
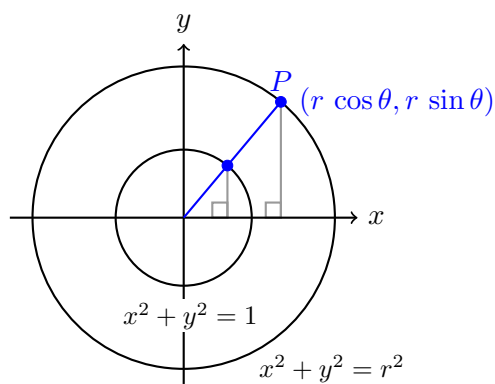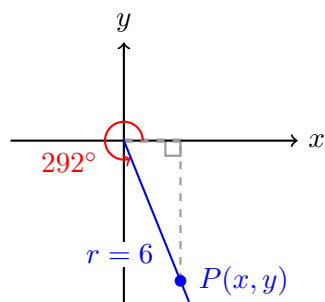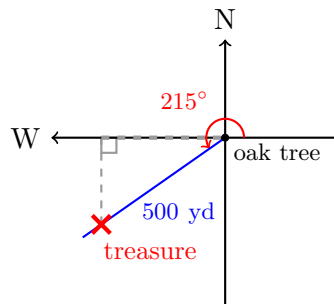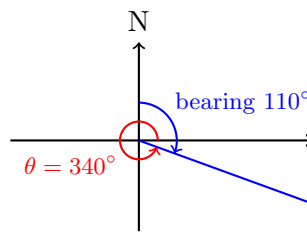
fig-4-2-rcircle

exam4-2-1

N

215°

W ← oak tree

500 yd

× treasure

exer4-2-1

N

bearing 110°

$\theta = 340°$

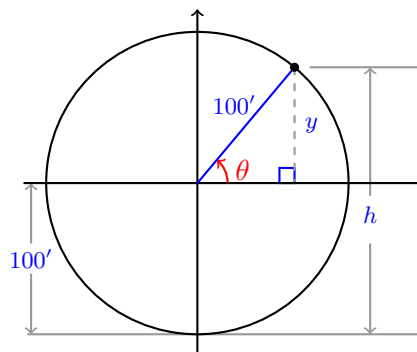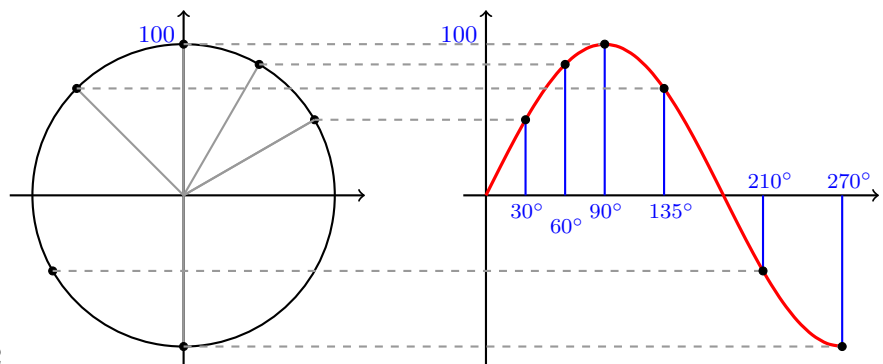fig-4-2-bearings

N

$\theta = 205°$ bearing 245°

y

60 mi

exam-4-2-2

100′

y

θ

h

100′
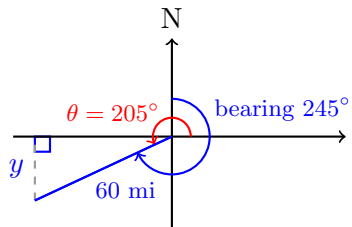
fig-4-2-ferris

fig-4-2-ferris2

$100'$

$100'$

$y = 100\sin\theta$

θ

fig-4-2-ferris3

y

1

$0°$ $60°$ $120°$ $180°$ $240°$ $300°$ $360°$

θ
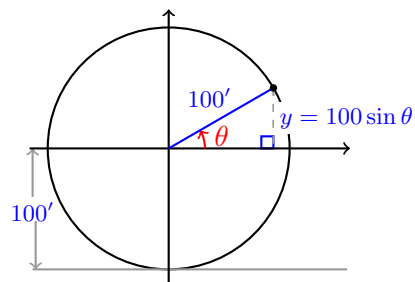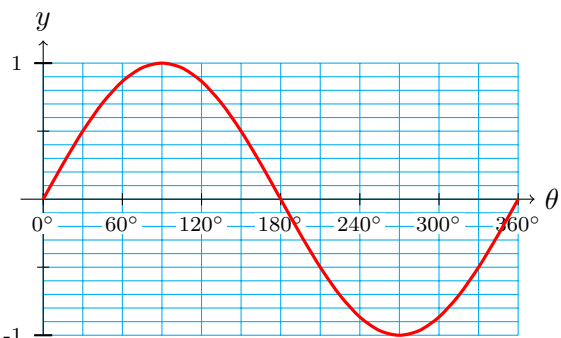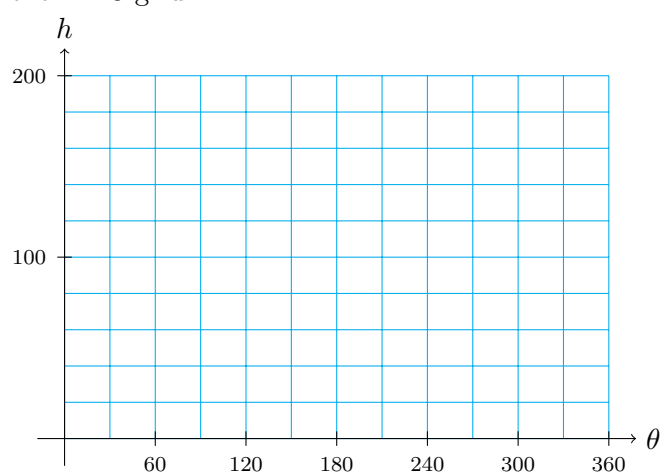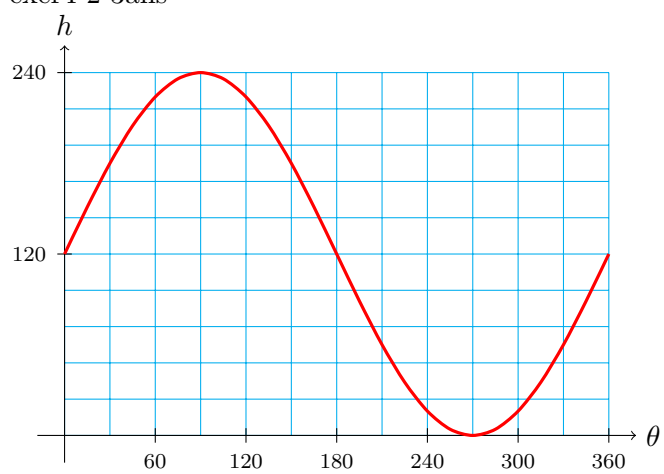
exam4-2-3a   -1
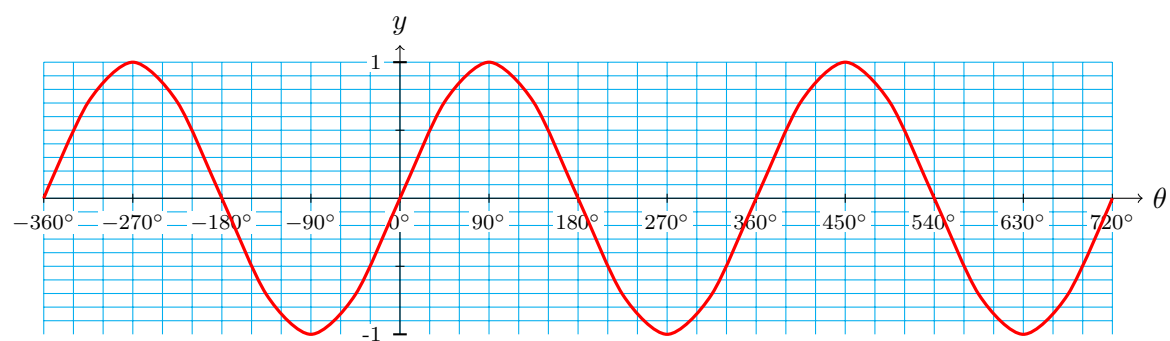
exam4-2-3b

exer4-2-3 grid

exer4-2-3ans

4

h

200

100

θ

60 120 180 240 300 360 420 480 540

IGNORE THIS ONE

d

18

θ

$x = 18$
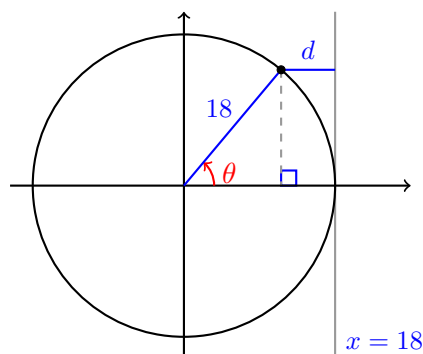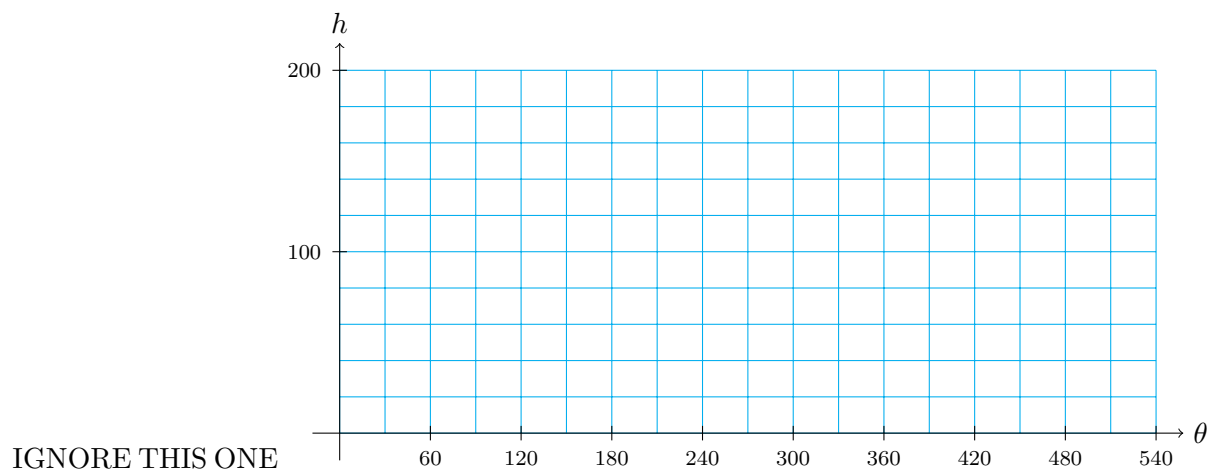
exam4-2-4a circle

exam4-2-4b transformed cosine graph
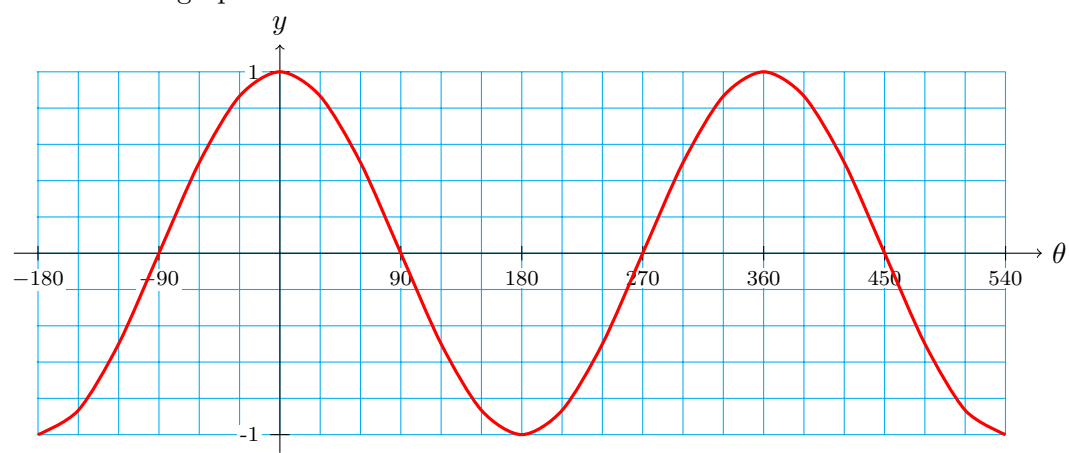
y

40
36
32
28
24
20
16
12
8
4

θ

0° 60° 120° 180° 240° 300° 360°
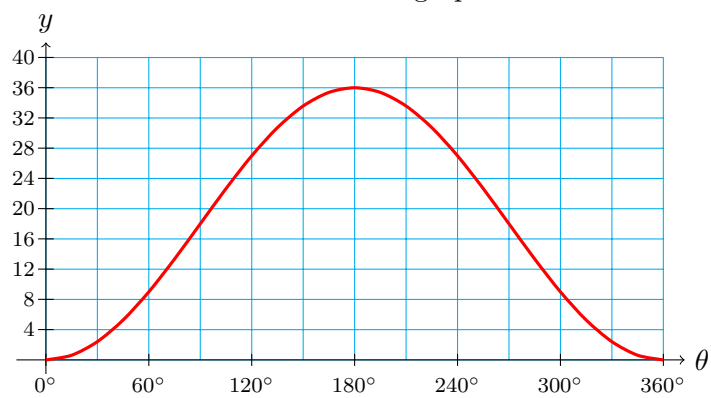
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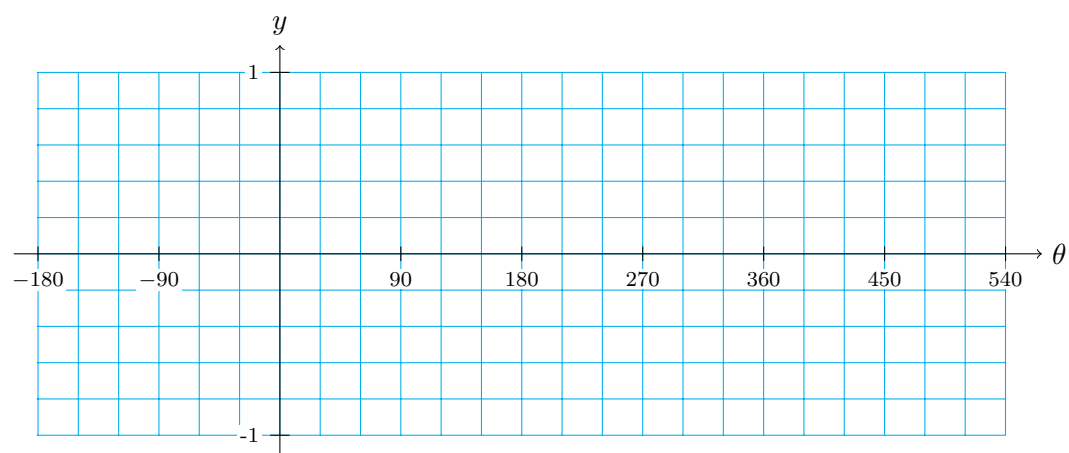
exer4-2-4ans graph

exam4-2-5 semi-circle graph

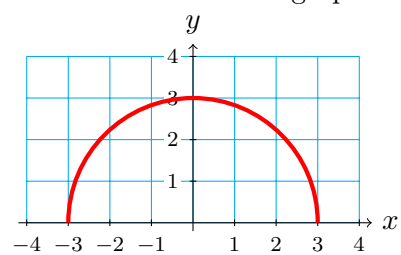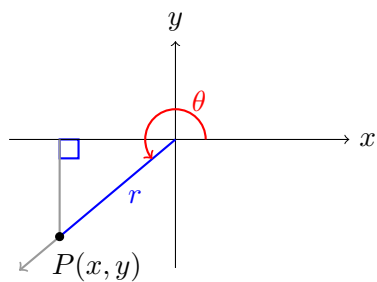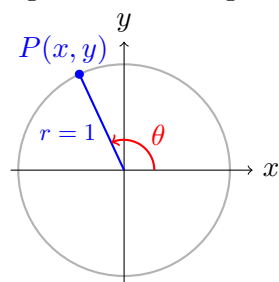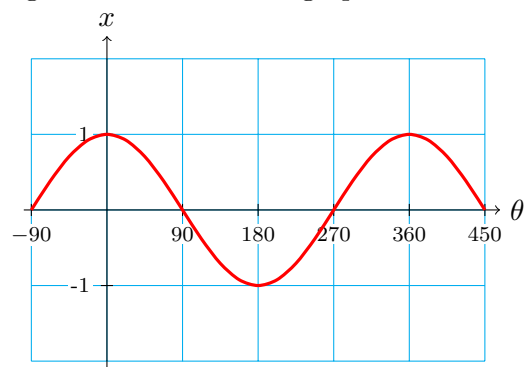

fig-4-2-caut1 angle

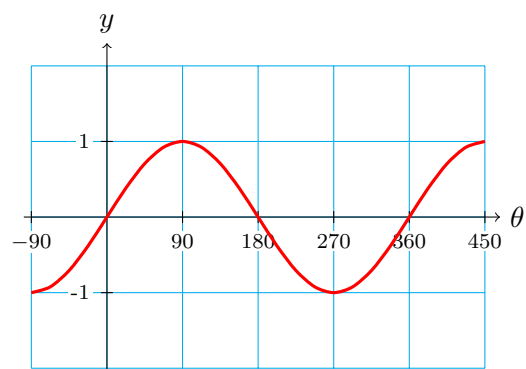fig-4-2-caut2b angle on unit circle

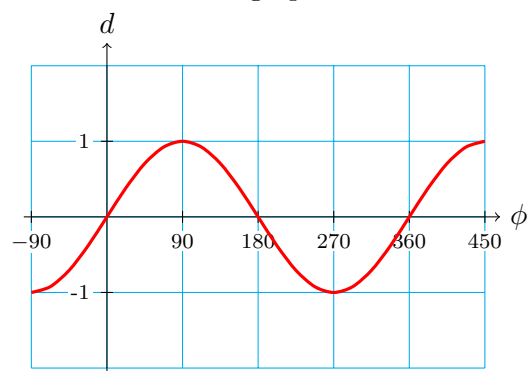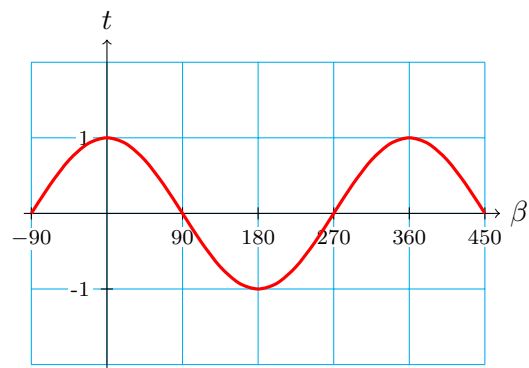

fig-4-2-caut2cos cosine graph
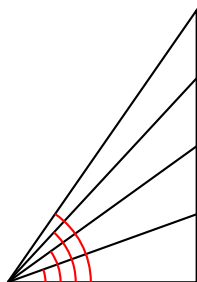

fig-4-2-caut2sin sine graph
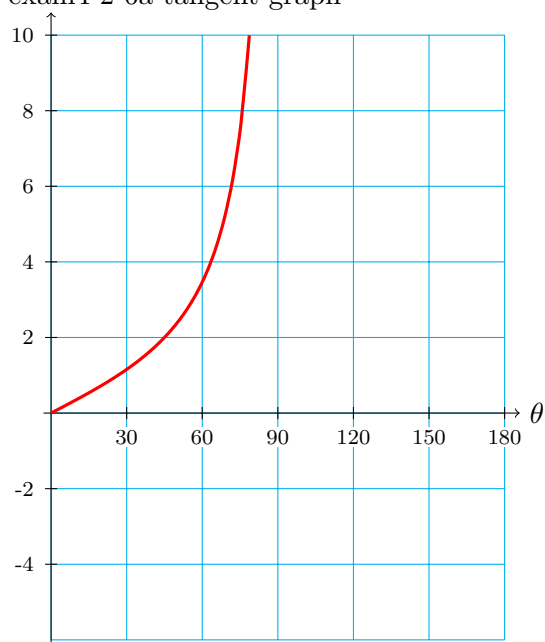
exer4-2-5ansa sine graph

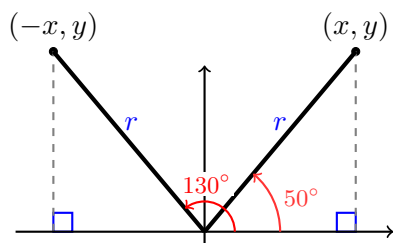

exer4-2-5ansb cosine graph

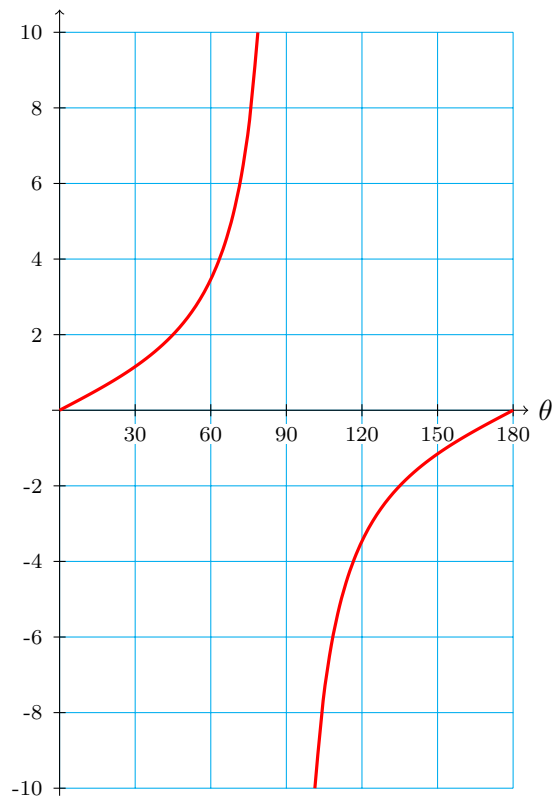SKIP THIS: fig-4-2-tan slopes It is the figure used in hmwk 2.2.53 hp2-2-53.svg
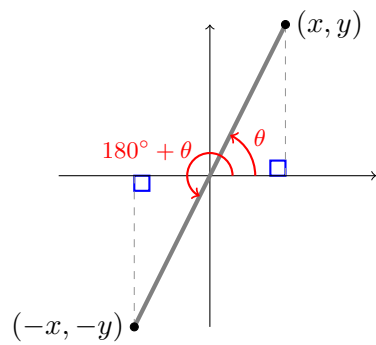
exam4-2-6a tangent graph

exam4-2-6b supplementary angles

$(-x, y)$ (x, y)

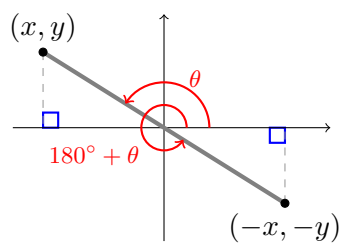r r

$130°$ $50°$

exam4-2-6c tangent graph
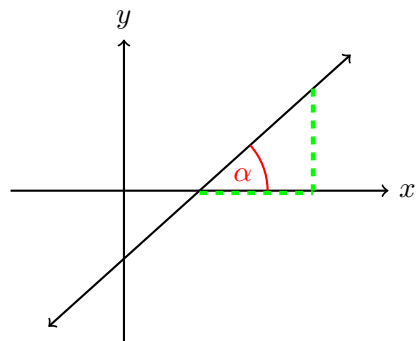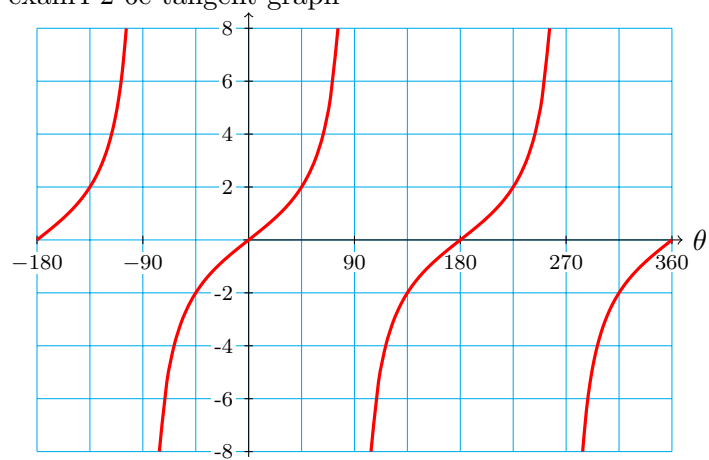
exam4-2-6d angles differing by 180 degrees

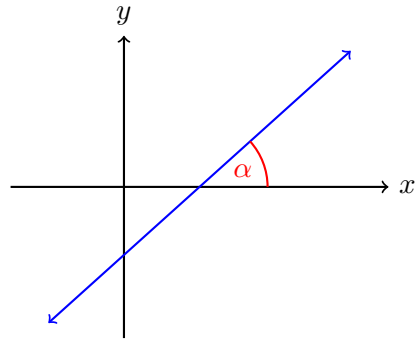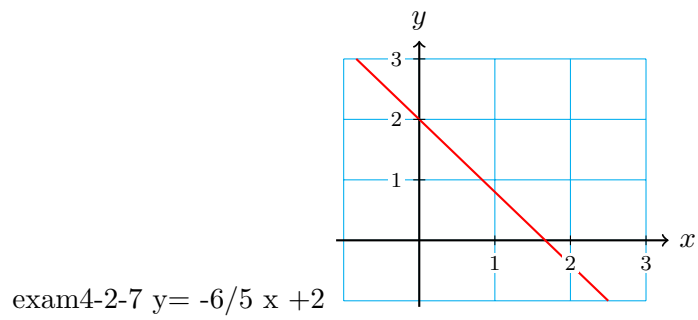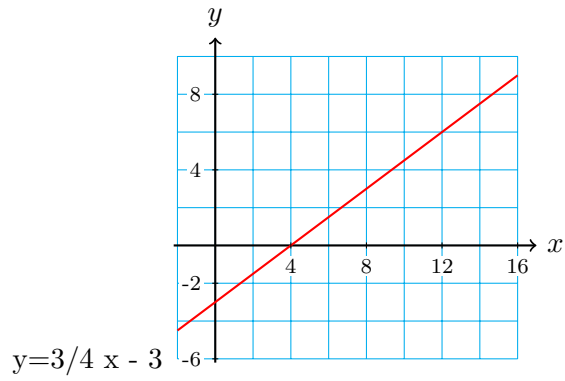exam4-2-6d2 angles differing by 180 degrees

(x, y)

θ

$180° + \theta$

$(-x, -y)$

exam4-2-6e tangent graph

8
6
4
2
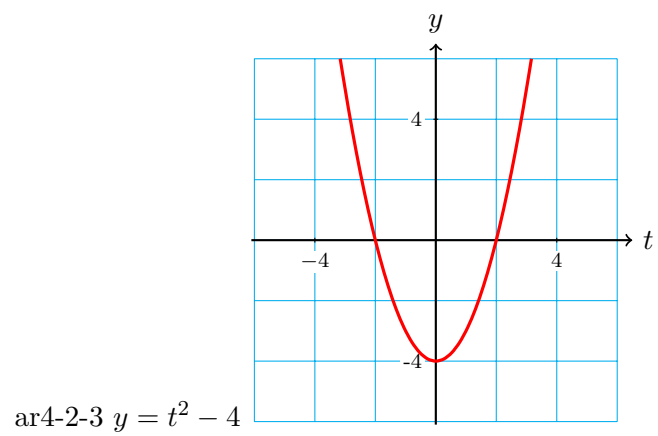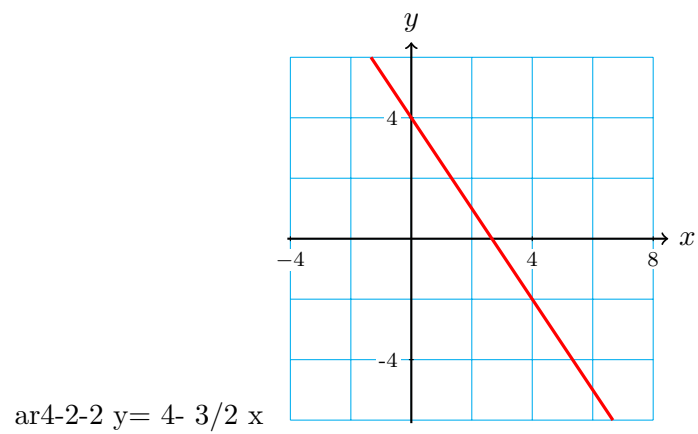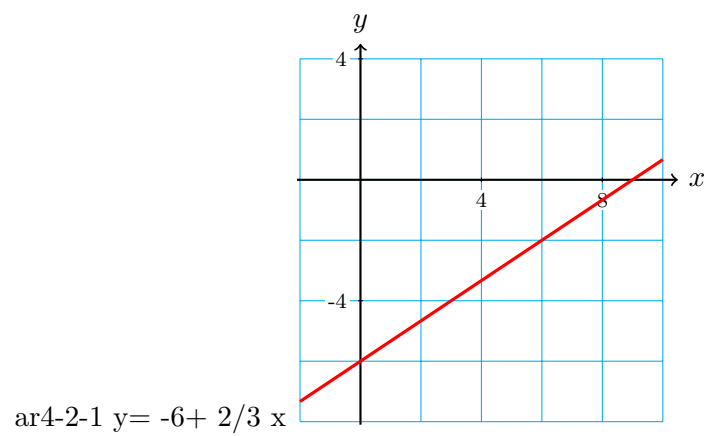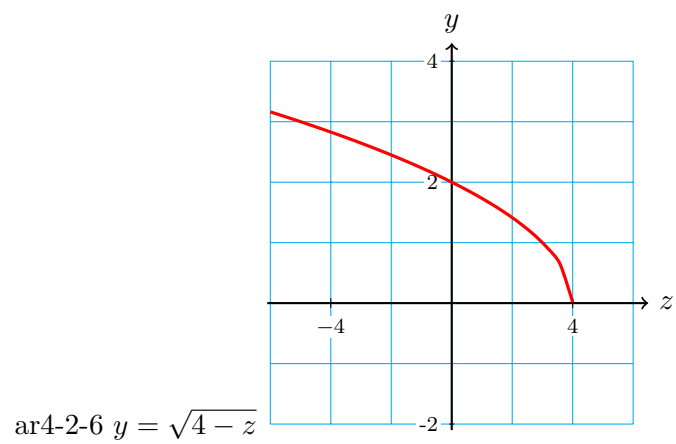−180   −90   90   180   270   360 θ
-2
-4
-6
-8

y

α

x

Section 4.2 Angle of inclination

11

Section 4.2 Angle of inclination

y=3/4 x - 3

exam4-2-7 y= -6/5 x +2

ar4-2-1 y= -6+ 2/3 x

ar4-2-2 y= 4- 3/2 x

ar4-2-3 $y = t^2 - 4$

13

ar4-2-4 $y = 9 - t^2$

ar4-2-5 $y = 2 - \sqrt{z}$

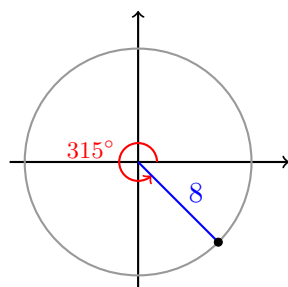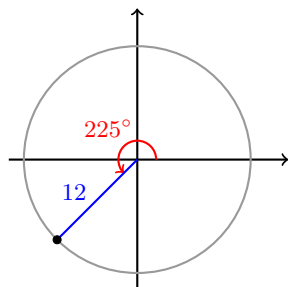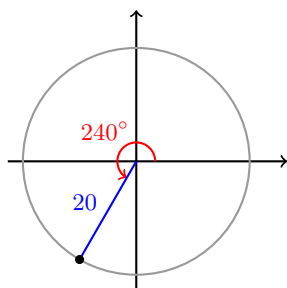ar4-2-6 $y = \sqrt{4 - z}$
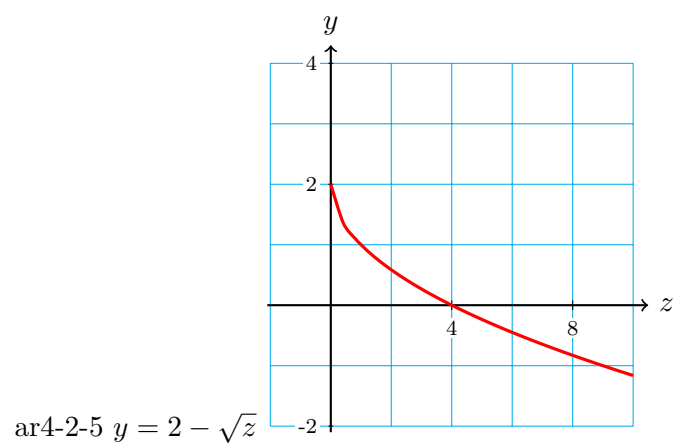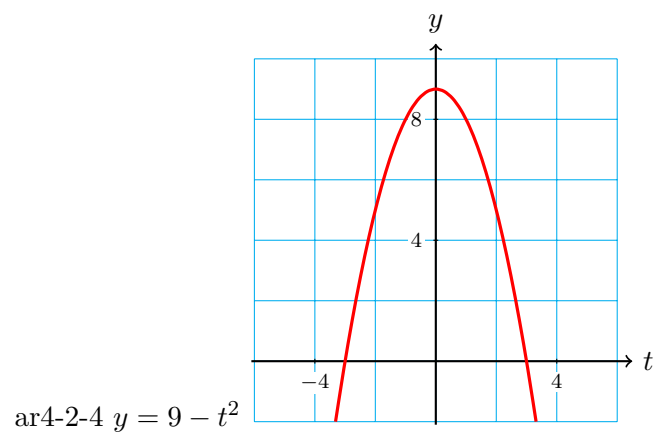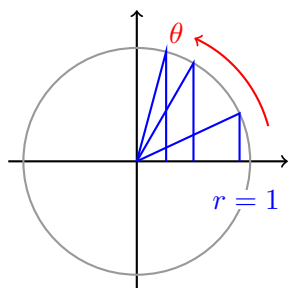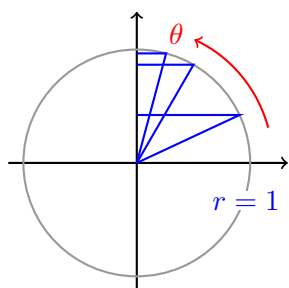
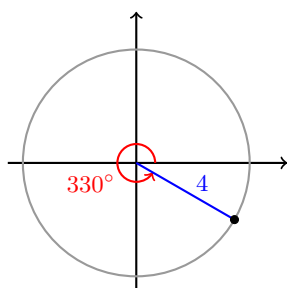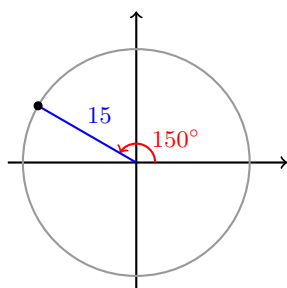sq4-2-1 circle
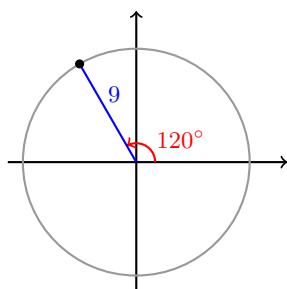
sq4-2-2 circle

2 Homework 4.2
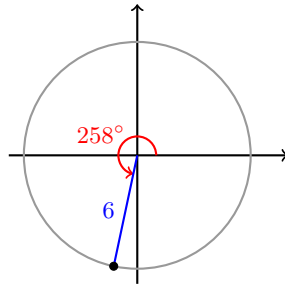
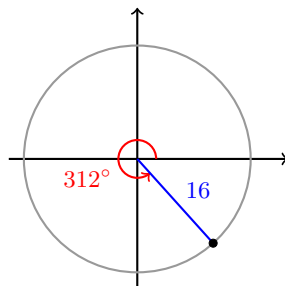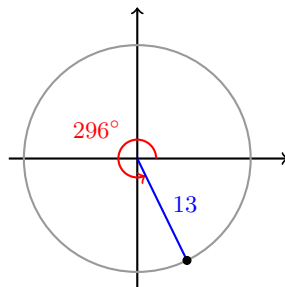hp4-2-1 circle

hp4-2-2 circle

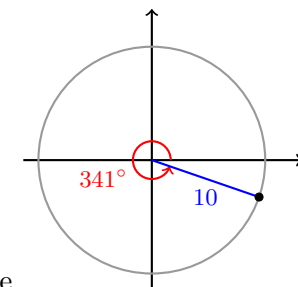hp4-2-3 circle

hp4-2-4 circle
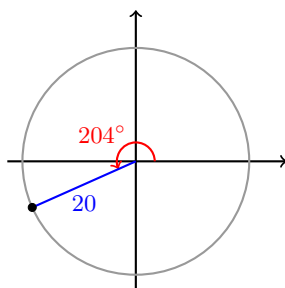

hp4-2-5 circle

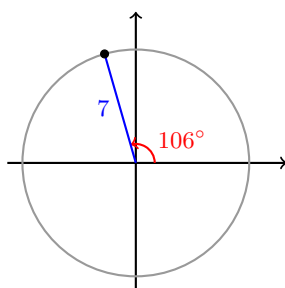hp4-2-6 circle

16

hp4-2-7 circle

hp4-2-8 circle

hp4-2-9 circle

hp4-2-10 circle

17

hp4-2-11 circle

hp4-2-12 circle
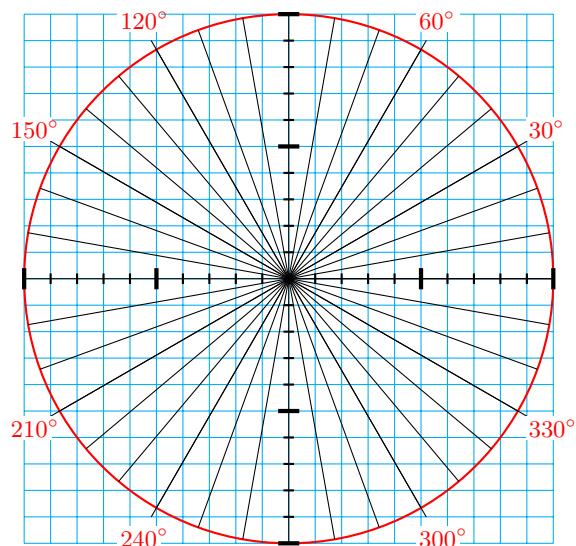
fig-4-2-unitcircle

fig-4-2-circleandgraph
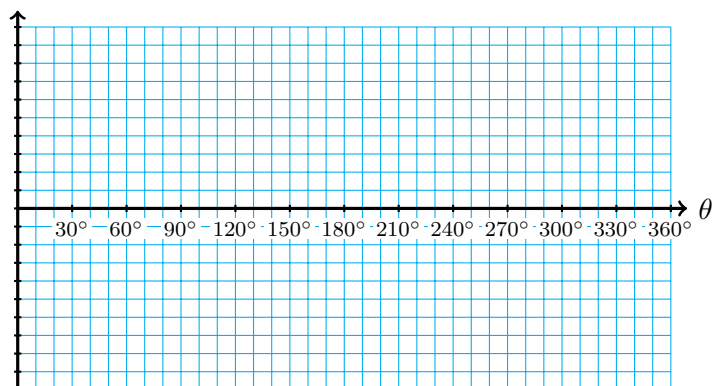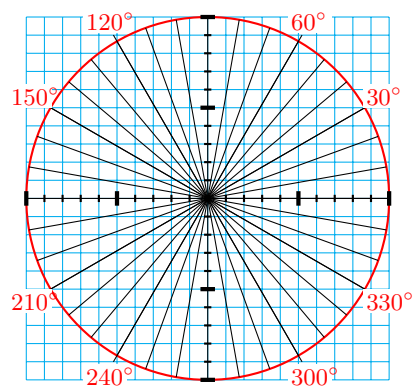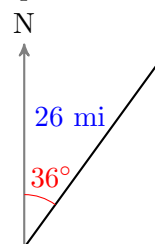
hp4-2-13ans vector
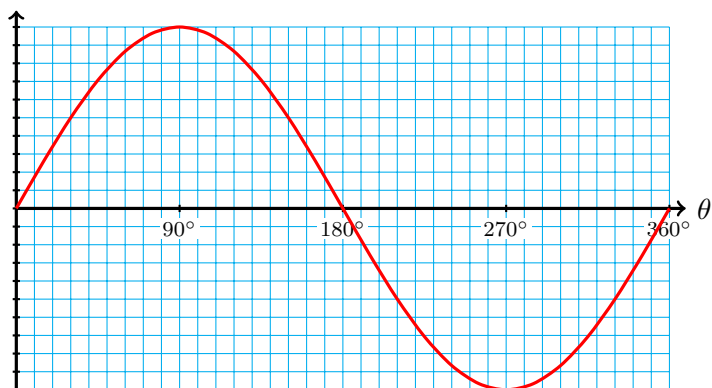

26 mi

36°

N
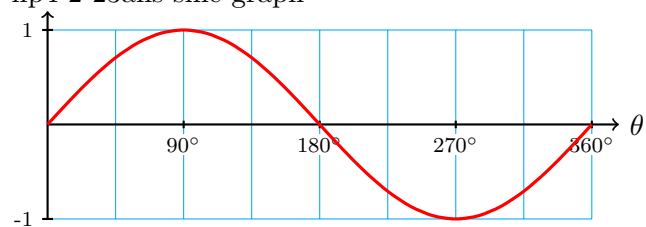
hp4-2-15ans vector

N

230°

120 km

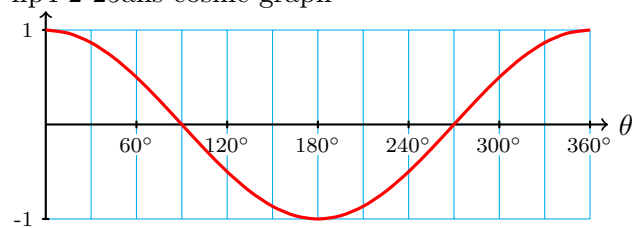hp4-2-17ans vector

N

32 km

285°
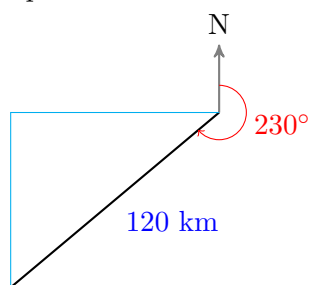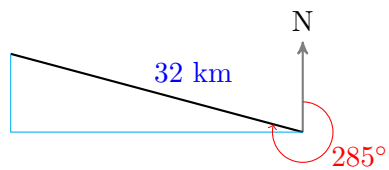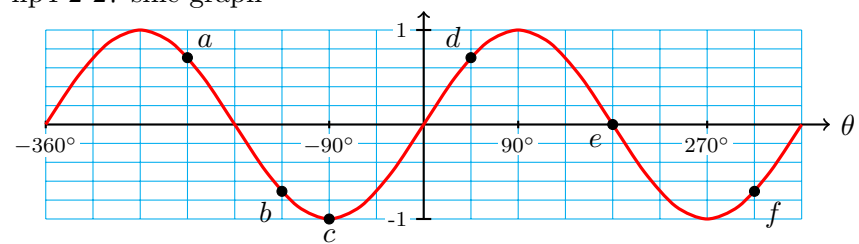
hp4-2-21ans sine graph
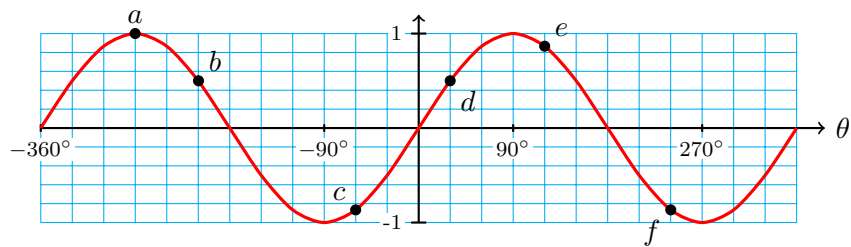
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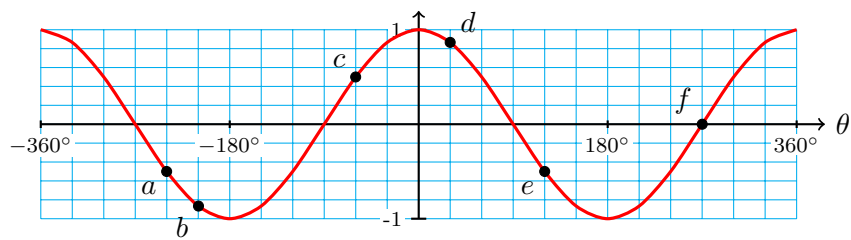

hp4-2-25ans cosine graph
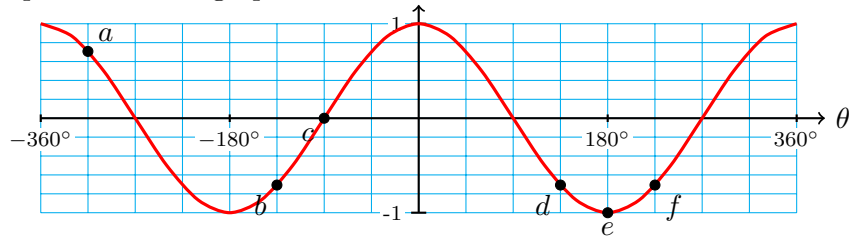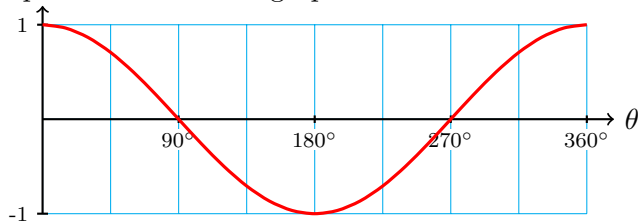

hp4-2-27 sine graph

hp4-2-28 sine graph

hp4-2-29 cosine graph

hp4-2-30 cosine graph

hp4-2-31ansb cosine graph

21
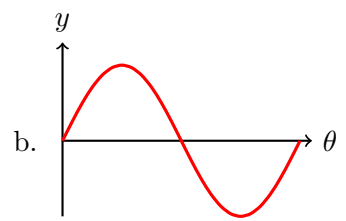
hp4-2-32a cosine graph
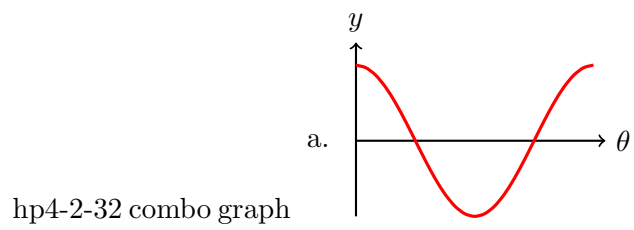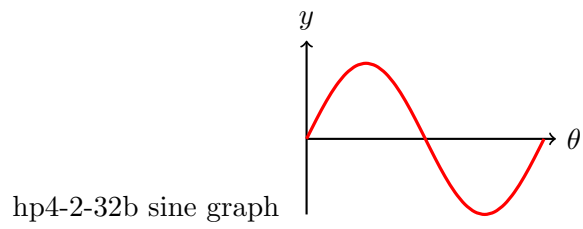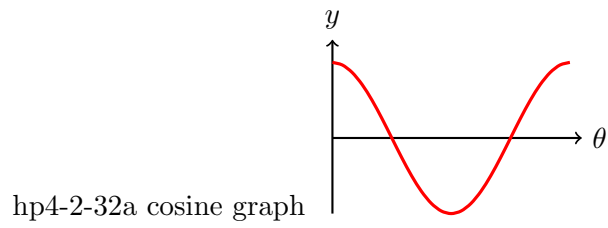
hp4-2-32b sine graph

a. b.

hp4-2-32 combo graph

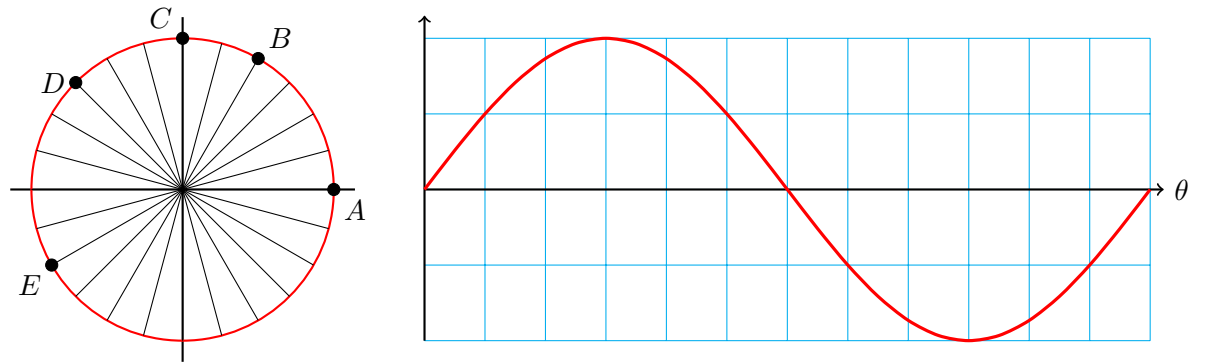fig-4-2-41 ferris wheel and graph
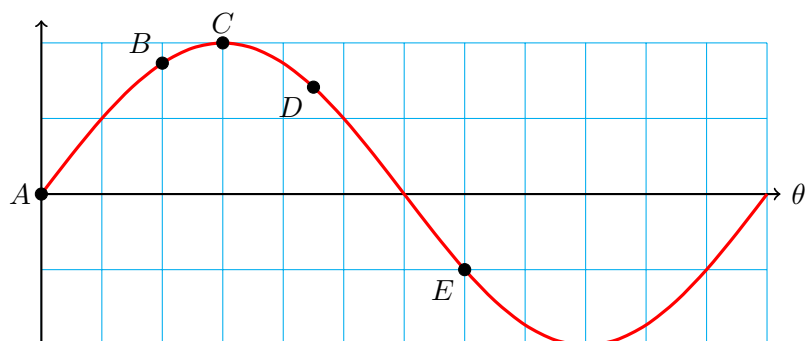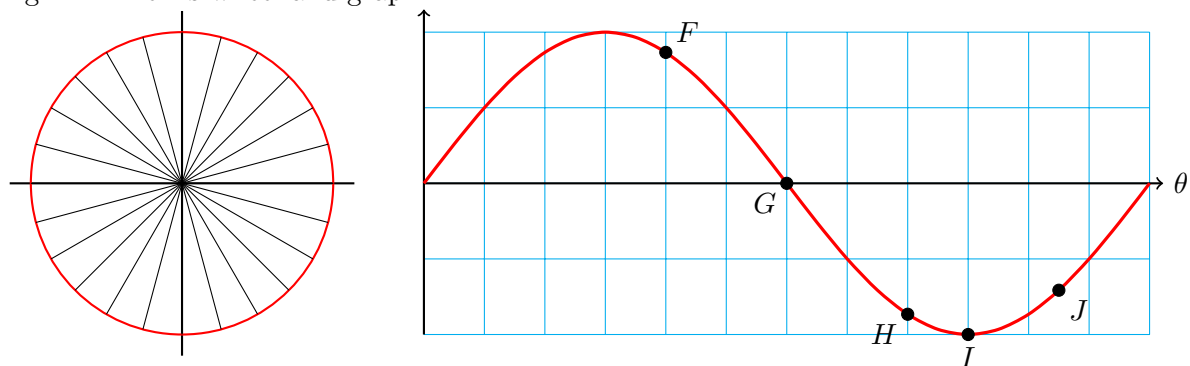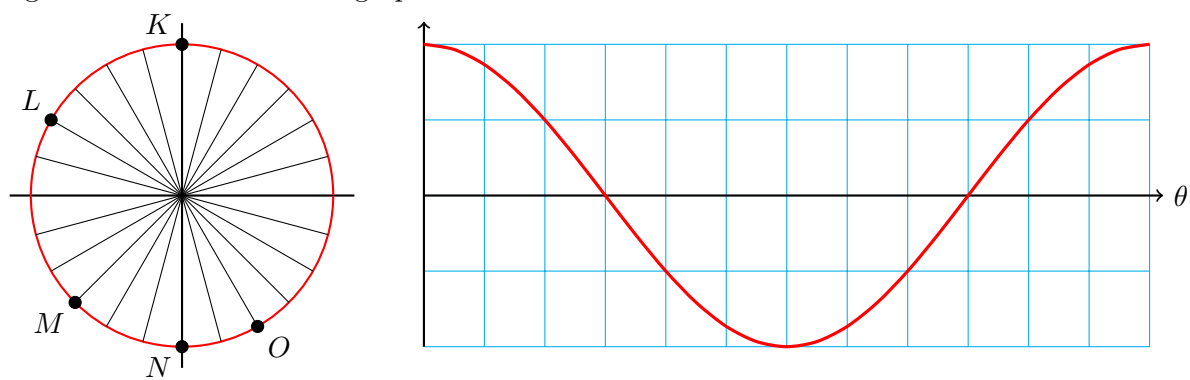
fig-4-2-41ans ferris wheel graph

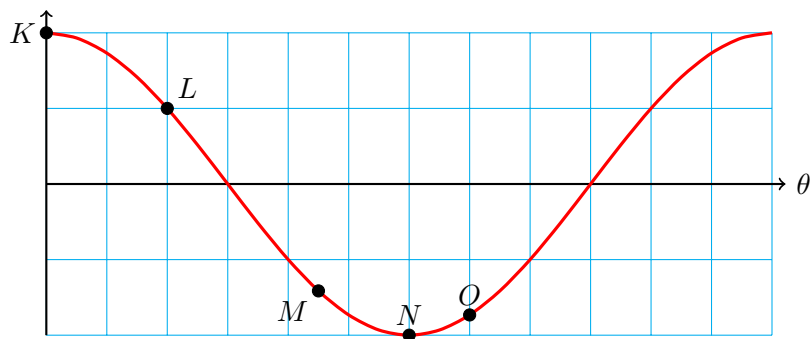fig-4-2-42 ferris wheel and graph
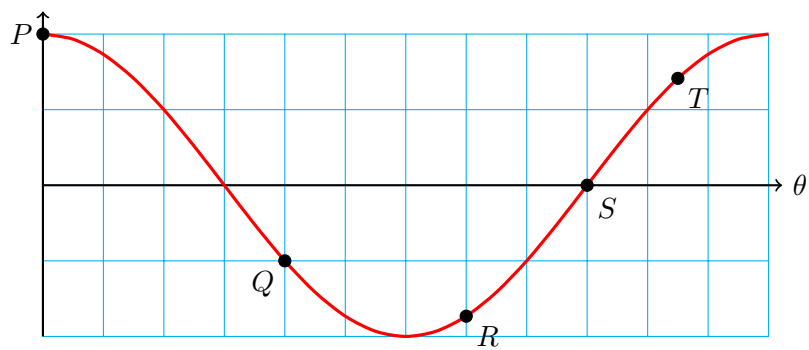
fig-4-2-43 circle and cosine graph
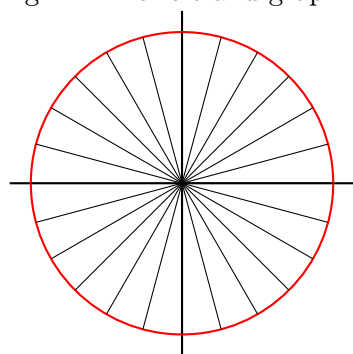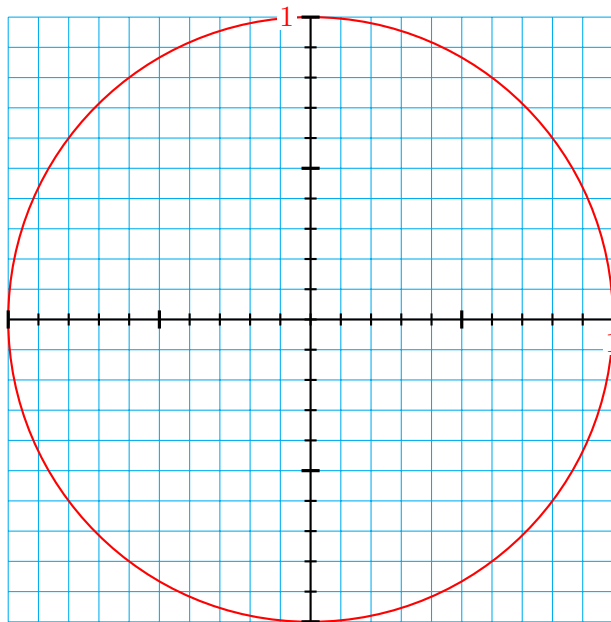
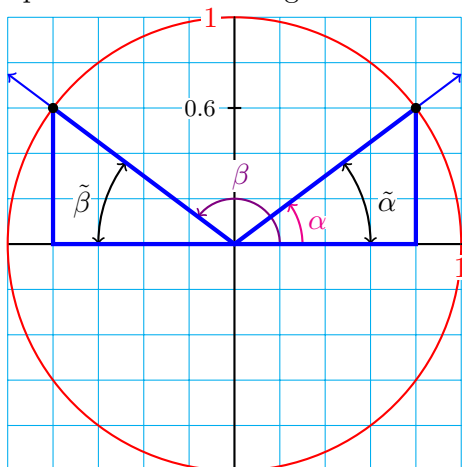fig-4-2-43ans cosine graph

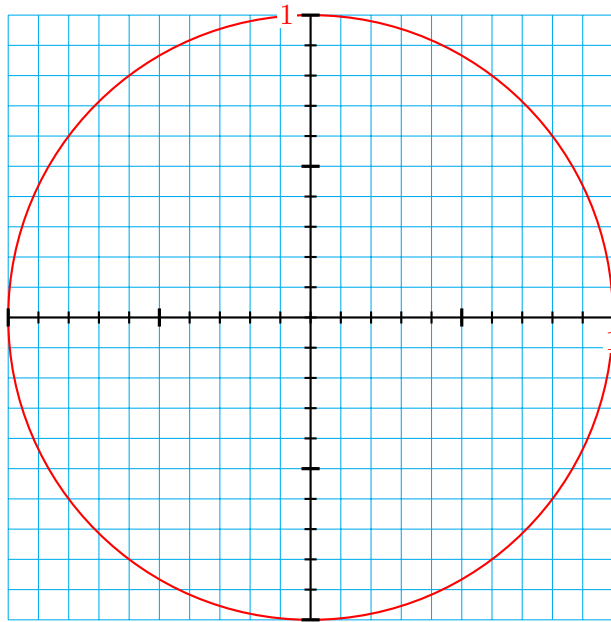fig-4-2-44 circle and graph

hp4-2-45 circle on grid

Use this grid for #45 and #46

hp4-2-45ans circle on grid
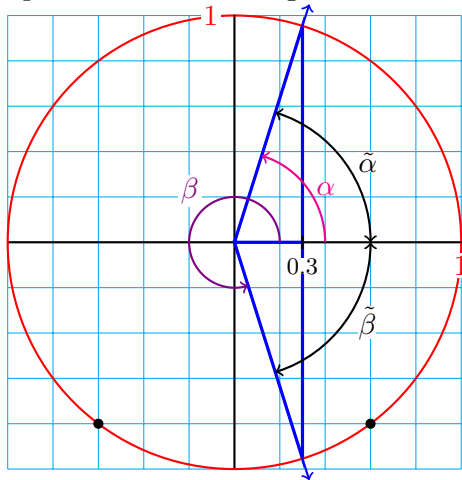

hp4-2-47 circle on grid

Use this grid for #47 and #48
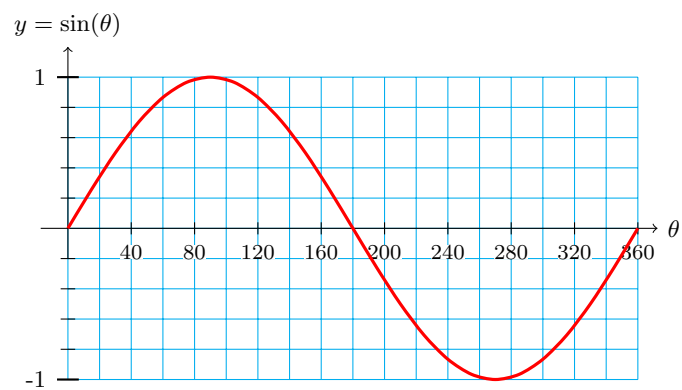
hp4-2-47ans circle on grid
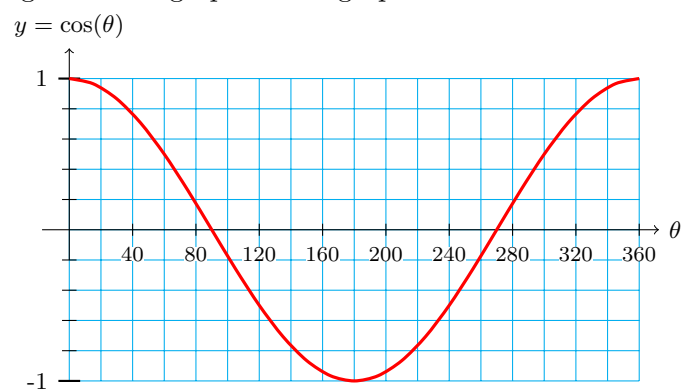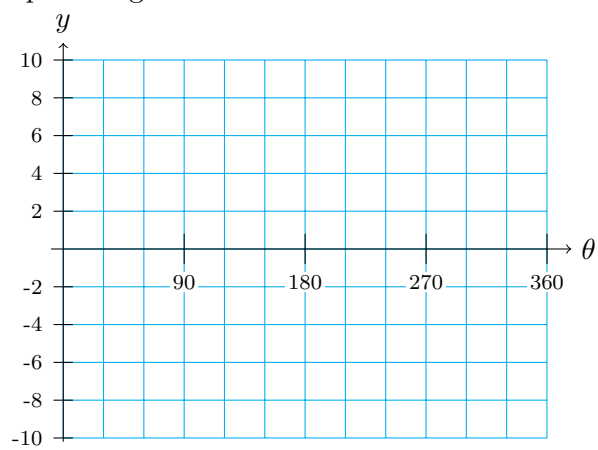

fig-4-2-sinegraph sine graph

$y = \sin(\theta)$

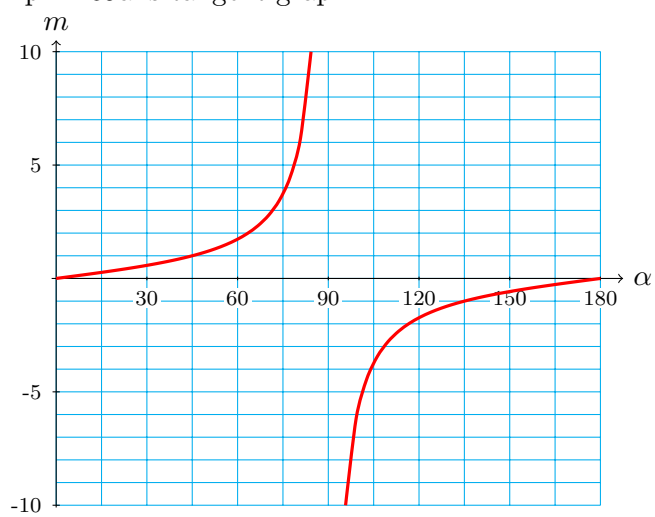fig-4-2-cosinegraph cosine graph
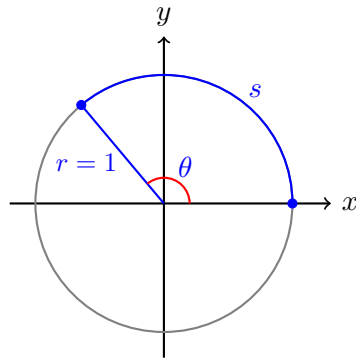
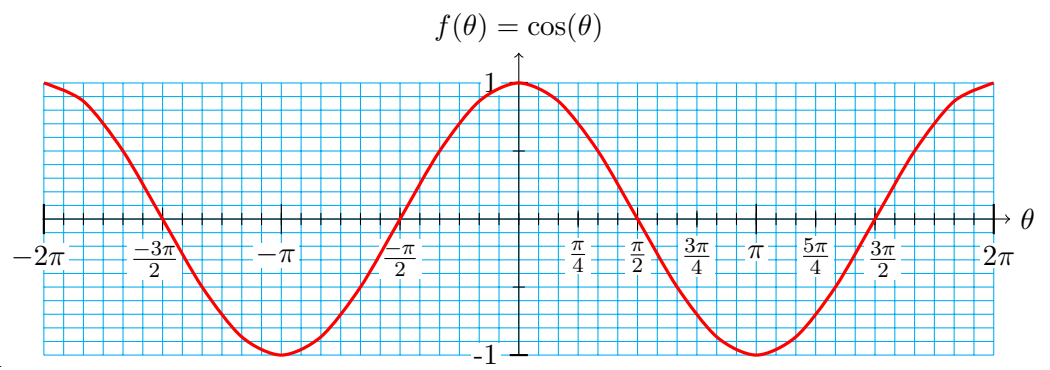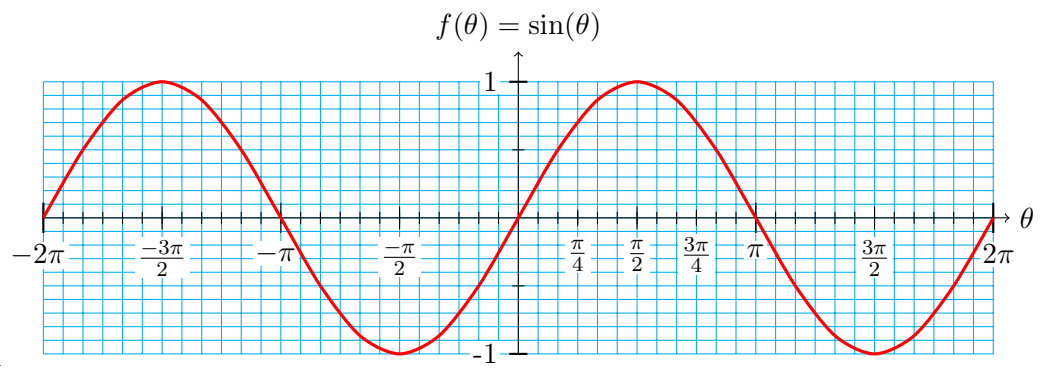$y = \cos(\theta)$

hp4-2-58 grid

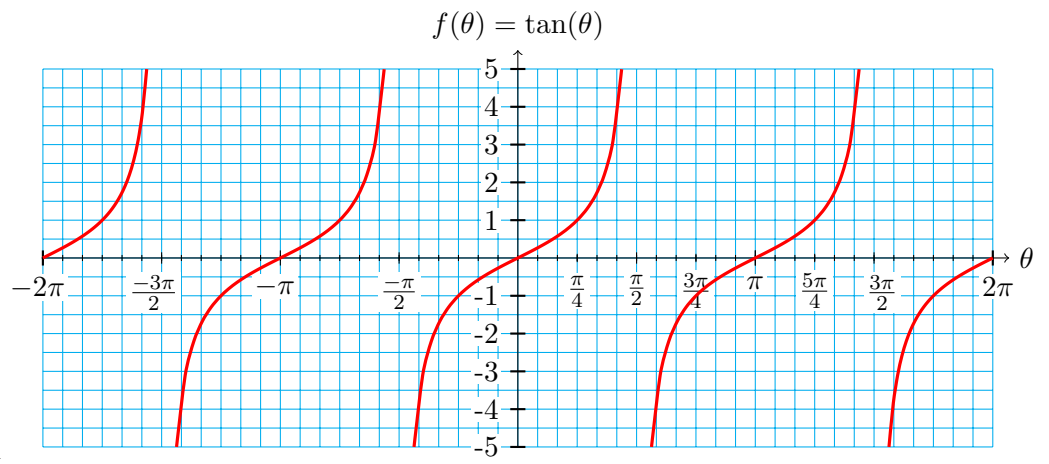

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hp4-2-59ans tangent graph
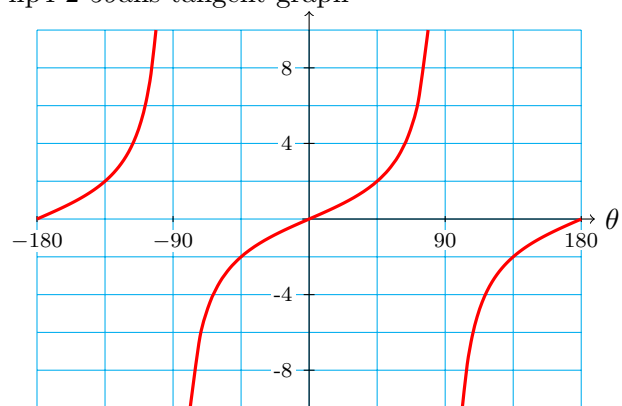
hp4-2-69ans tangent graph

3   Stuff for later
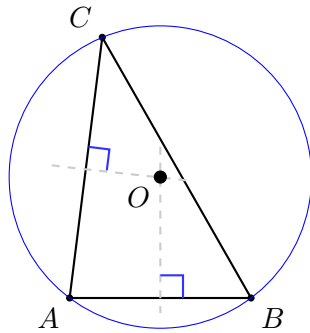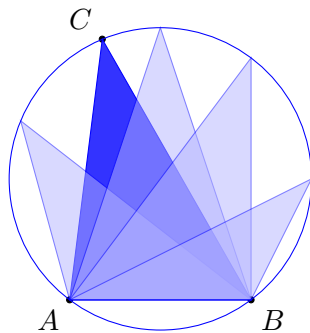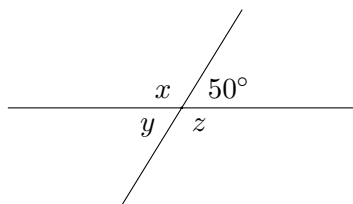
On a unit circle

$$f(\theta) = \sin(\theta)$$

sine graph

$$f(\theta) = \cos(\theta)$$

cosine graph

$$f(\theta) = \tan(\theta)$$

tangent graph

part A: law of sines a circumscribing circle

part B: law of sines a circumscribing circle

$$x \quad 50°$$
$$y \quad z$$

Exercise not used?